REMARKS

In the non-Final Office Action of May 5, 2004, the Examiner objected to the specification due to informalities; objected to claim 8 due to alleged use of an inappropriate article; rejected claim 22 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention; rejected claims 1-3, 6, 8-16, 18-26, 29-37, 40, 41 and 44 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,081,525 to Christie et al. ("Christie 525") in view of U.S. Patent No. 6,430,195 to Christie et al. ("Christie 195"); rejected claim 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Christie 525 in view of U.S. Patent No. 6,195,735 to Allen, Jr. et al. ("Allen"); and objected to claims 4, 5, 7, 27, 28, 38, 39, 42, and 43 as being dependent upon a rejected base claim.

By way of this amendment, claims 3, 5-7, 9-15, 18, 19, 27, 28, 30, 38, 39, 41 and 42 have been amended to improve form. Claim 8 was amended to correct the inappropriate article pointed out by the Examiner and claim 22 was amended to address the rejection under 35 U.S.C. § 112, second paragraph. Claims 1-44 remain pending.

Applicants note with appreciation that claims 4, 5, 7, 27, 28, 38, 39, 42, and 43 have been indicated as containing allowable subject matter.

Objections to the Specification

On page 2 of the Office Action, the Examiner objected to the specification due to informalities. Applicants amended the specification as suggested by the Examiner. Therefore, Applicants respectfully request that the objection to the specification be withdrawn.

Objection to Claim 8

On page 3 of the Office Action, the Examiner objected to claim 8 due to alleged use of an inappropriate article. Applicants amended claim 8 as suggested by the Examiner. Therefore, Applicants respectfully request that the objection of claim 8 be withdrawn.

Section 112, Second paragraph Rejection of Claim 22

On page 3 of the Office Action, the Examiner rejected claim 22 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner pointed out that the phrase, "wherein the second multi-service control point is the multi-service control point are the same multi-service control point" is vague and indefinite. Applicants amended the above phrase of claim 8 to "wherein the second multi-service control point is the multi-service control point" to indicate that the multi-service control point and the second multi-service control point are the same multi-service control point. Applicants submit that the claim is now definite. Support for this

amendment can be found in the specification at page 20, lines 24-28. Therefore, Applicants respectfully request that the rejection be withdrawn.

Rejection of Claims 1-3, 6, 8-16, 18-26, 29-37, 40, 41 and 44

On page 4 of the Office Action, the Examiner rejected claims 1-3, 6, 8-16, 18-26, 29-37, 40, 41 and 44 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Christie 525 in view of Christie 195. Applicants respectfully traverse the rejection.

Claim 1 is directed to an intelligent network for use with an ATM network to set up an ATM switched virtual circuit to provide VToA services. The intelligent network includes a multi-service control point, an ATM signaling intercept processor, and a service administration. The multi-service control point is operable to receive an input extracted from an input ATM setup message that includes a called party phone number value and a VToA designator, and generate an output in response for use in generating an output ATM setup message. The ATM signaling intercept processor is operable to intercept the input ATM setup message from an ingress ATM edge switch of the ATM network, extract the input from the input ATM setup message, communicate the input to the multi-service control point, receive the output generated by the multi-service control point, generate the output ATM setup message using the output, and communicate the output ATM setup message to the ingress ATM edge switch of the ATM network. The service administration is operable to provision the multi-service control point and the ATM signaling intercept processor.

Christie 195 and Christie 525 do not disclose or suggest, either separately or in combination, the multi-service control point being operable to receive an input extracted from an input ATM setup message that includes a called party phone number value and a VToA designator, and generate an output in response for use in generating an output ATM setup message, as recited in claim 1.

On page 5 of the Office Action, the Examiner stated:

> User information can be switched through an ATM fabric on a call by call basis (in the ATM switching, a call basis is required to provide switched virtual circuits "SVC" or switched virtual paths "SVP"; and therefore, as such can be considered as Voice telephony over ATM "VToA", and VPI can be considered as a VToA designator or SVC for VToA)

Applicants respectfully disagree that the virtual path identifier (VPI) is a VToA designator.

Not all switched virtual circuits (or switched virtual paths) over ATM are voice calls. For example, even if Christie 525 discloses that a call is set up for voice, the call may be used to send a fax message or may be used to send data via a modem. Thus, the mere presence of a VPI cannot be interpreted as a VToA designator. One of ordinary skill would understand that a VPI/virtual channel identifier (VCI) combination identifies a particular virtual connection that may or may not be a voice connection. Therefore, VPI cannot be considered to be a VToA designator, as suggested by the Examiner.

Christie 195 discloses that broadband telecommunication systems provide telecommunication system providers the ability to integrate voice, data, and video traffic (see Christie 195, at column 1, line 65 through column 2, line 1).

Christie 195, at Fig. 2 and column 3, line 42-52 discloses:

> FIG. 2 depicts a version of the invention. CPE 210 and 212 are shown connected to broadband system interface 200 over connections 220 and 222 respectively. CPE 210 and 212 provide services to many communications devices at the customer premises. Examples of these devices would include computers, modems, and facsimile machines. Connections 220 and 222 are ISDN connections or are connections based on any format that can be converted to ISDN. A common example would be TDM connections using the ESF format. Note that broadband system interface 200 replaces the local switch of FIG. 1.

Thus, Christie 195 discloses that calls may carry faxed data or computer modem signals. One of ordinary skill would understand that a switched virtual circuit having a VPI/VCI to indicate a particular virtual connection may or may not be a voice call. Therefore, the VPI is not equivalent to the VToA designator, as suggested by the Examiner.

For at least the reasons discussed above, Applicants submit that neither Christie 525 nor Christie 195, taken together or in any combination, disclose or suggest the multi-service control point being operable to receive an input extracted from an input ATM setup message that includes a called party phone number value and a VToA designator, as recited in claim 1.

Claims 2, 3, 6, 8-16, and 18-25 depend from claim 1 and are patentable over Christie 525 in view of Christie 195 for at least the reasons discussed with respect to claim 1. Therefore, Applicants respectfully request that the rejection of claims 2, 3, 6, 8-16, and 18-25 be withdrawn. Moreover, the claims recite additional features not disclosed or suggested by Christie 525 and Christie 195.

For example, amended claim 3 further recites that the input (extracted from an input ATM setup message) includes an ATM address of a calling party CPE. On page 7 of the Office Action, the Examiner admitted that Christie 525 fails to disclose this

feature. However, the Examiner argued that Christie 525, at column 3, line 57-60, discloses that communication users 110 and 120, of Fig. 1 of Christie 525, could be a CPE. Christie 525, at column 3, line 57-60 discloses:

> User 110 and user 120 could be any entity that supplies telecommunications traffic to network 100. Some examples would be a local exchange carrier (LEC) switch or customer premises equipment (CPE).

Thus, user 110 and user 120 may be CPEs. However, the Examiner then argues that Christie 525 inherently discloses that such an input includes an ATM address of the calling party CPE because before establishing a connection between two CPEs in an ATM network, the address of a calling CPE should be included in the input ATM setup message for such a connection.

Applicants submit that the input ATM setup message would not require an ATM address of a calling party CPE. If the address of the calling party CPE is required (a point which Applicants do not concede), the address would be required in the output ATM setup message to be received by the egress ATM edge switch, not in the input ATM setup message.

Applicants further submit that Christie 195 also fails to disclose or suggest the input (extracted from an input ATM setup message) including an address of a calling party CPE, as recited in claim 3.

Amended claim 6 depends from claim 1 and further recites that the output (generated by the multi-service control point in response to receiving the input extracted from an input ATM setup message) includes an ATM address of a called party. On page

7 of the Office Action, the Examiner argued that Christie 525, at column 18, lines 6-7 discloses this feature.

Christie 525, at column 18, lines 6-7 discloses, "The initial address message (IAM) initiates the call and contains call setup information, such as the dialed number." First, Applicants submit that the IAM message is a SS7 protocol message, not an input or output ATM setup message. Second, a dialed number is not the equivalent of an ATM address.

Christie 195 also fails to disclose or suggest the above-mentioned feature of claim 6.

Amended claim 12 depends from claim 1 and further recites that the multi-service control point is operable to receive an input extracted from an input ATM connect message and to generate an output in response for use in generating an output ATM connect message, and that the ATM signaling intercept processor is operable to intercept the input ATM connect message from an ingress ATM edge switch of the ATM network, to extract the input from the input ATM connect message, to communicate the input to the multi-service control point, to receive the output generated by the multi-service control point, to generate the output ATM connect message using the output, and to communicate an output ATM signaling message to the ingress ATM edge switch of the ATM network.

On page 10 of the Office Action, the Examiner admitted that Christie 525 failed to explicitly disclose an ATM signaling intercept processor operable to intercept an input ATM connect message from an ingress ATM edge switch of the ATM network and

extract an input from the input ATM connect message. The Examiner argued that Christie 195, at Figs. 4 and 5 disclosed this feature.

> Christie 195, at Fig. 4 and column 6, lines 38-49 discloses:
>
> If the called party answers, the signaling processor will receive an SS7 Answer Message (ANM) from the far end. The signaling processor will send an SS7 ANM message to the SS7 converter, and the SS7 converter will send an analogous ISDN connect message to the ISDN converter. At this point, the call is connected and a conversation, fax transmission, etc., may take place. The ISDN converter converts the bearer channel from the CPE into an ISDN DS0, and the mux converts this DS0 into ATM cells with the selected VPI/VCI. Additionally, the mux converts ATM cells from the companion VPI/VCI into the return path of the DS0.

Thus, as one can see from the cited portion above, a SS7 ANM message is received by the signaling processor, the SS7 converter converts the SS7 ANM message to an ISDN connect message and sends the ISDN connect message to the ISDN converter. Thus, this portion of Christie 195 does not disclose that an ATM connect message is received. Therefore, an ATM signaling intercept processor cannot be operable to intercept the input ATM connect message from an ingress ATM edge switch, as recited in claim 12. Further, no portion of Christie 195 discloses or suggests the ATM connect message is received at an ingress ATM edge switch and intercepted by an ATM signaling intercept processor.

> Christie 195, at Fig. 5 and column 7, lines 14-21 discloses:
>
> When the ISDN converter senses that the telephone has been answered, it will send an ISDN connect message to the SS7 converter, and the SS7 converter will provide an analogous SS7 ANM to the signaling processor. The signaling processor will send an SS7 ANM to the originating side of the call. The signaling processor will instruct the mux to stop the ringback tone and provide cut-through on the call. At this point, the call is connected.

Thus, when a telephone is answered, the ISDN converter sends an ISDN connect message to the SS7 converter, which provides an SS7 ANM message to the signaling processor. The signaling processor sends an SS7 ANM message to the originating side of the call. Thus, neither this portion of Christie 195, nor any other portion, discloses or suggests that an ATM connect message is received. Therefore, an ATM signaling intercept processor of Christie 195 cannot be said to be operable to intercept the input ATM connect message from an ingress ATM edge switch, as recited in claim 12.

Amended claim 13 depends from claim 1 and further recites that the multi-service control point is operable to receive an input extracted from an input ATM release message and to generate an output in response for use in generating an output ATM release message, and that the ATM signaling intercept processor operable to intercept the input ATM release message from an ingress ATM edge switch of the ATM network, to extract the input from the input ATM release message, to communicate the input to the multi-service control point, to receive the output generated by the multi-service control point, to generate the output ATM release message using the output, and to communicate an output ATM signaling message to the ingress ATM edge switch of the ATM network.

On page 11 of the Office Action, the Examiner admitted that Christie 525 failed to disclose or suggest an ATM signaling intercept processor operable to intercept an ATM release message from an ingress ATM edge switch of the ATM network, and extract an input from the ATM release message. The Examiner relied on Christie 195 to disclose this feature.

The Examiner argued that Christie 195 disclosed this feature in Figs. 6 and 7.

Christie 195, at Figs. 6-7 and column 7, lines 22-54 discloses:

> FIG. 6 depicts a call being cleared when the CPE of FIGS. 4 and 5 disconnects because the connected communications device hangs-up. The ISDN converter senses the on-hook and sends an ISDN disconnect message to the SS7 converter. The SS7 converter sends an analogous SS7 release (REL) message to the signaling processor. The signaling processor initiates release procedures and sends an SS7 REL to the other side of the call connection. In addition, the signaling processor sends an instruction to the mux to disconnect the DS0 and the VPI/VCI. The signaling processor will then send an SS7 Release Complete Message RLC to the SS7 converter. The SS7/ISDN converter will then send an ISDN release message to the ISDN converter which will provide a loop-open to the CPE. The far side will typically respond with a SS7 RLC to the signaling processor. At this point, the call is disconnected
>
> FIG. 7 depicts a call being cleared when the far end of the call hangs-up. The far end will send an SS7 REL to the signaling processor, and the signaling processor will initiate release procedures for the call. The signaling processor will send an SS7 REL to the SS7 converter, and the SS7 converter sends an analogous ISDN disconnect message to the ISDN converter. The ISDN converter provides an on-hook for the DS0 to the CPE. The signaling processor sends an control instruction to the mux to disconnect the DS0 from the VPL/VCI. The signaling processor also sends an SS7 RLC to the other side of the call. The ISDN converter will provide an ISDN release message to the SS7 converter. The SS7 converter will provide an analogous SS7 RLC to the signaling processor indicating that the connection has been cleared for re-use. At this point, the call is disconnected.

Neither the above portion of Christie 195, nor any other portion of Christie 195, discloses or suggests receipt of an ATM release message. The above portion discloses ISDN and SS7 messages being received. Therefore, Christie 195 does not disclose or suggest an ATM signaling intercept processor operable to intercept the input ATM release message from an ingress ATM edge switch of the ATM network, as recited in claim 13.

Amended claim 15 depends from claim 1 and further recites that the ATM signaling intercept processor is operable to model multiple switched virtual circuits, including the ATM switched virtual circuit, for providing VToA using the ATM network.

On pages 11-12 of the Office Action, the Examiner argued that Christie 525 discloses the ATM signaling intercept processor including a call model operable to model multiple switched virtual circuits, including the ATM switched virtual circuit, for providing VToA using the ATM network. The Examiner relied on Christie 525, at column 4, lines 1-8 and column 15, lines 1-4 to support his argument.

Christie 525, at Fig. 1 and column 4, lines 1-8 discloses:

> Links 190 and 193 are any links capable of transferring signaling messages with examples being Signaling System #7 (SS7) links or C7 links. ATM cross-connect system 150 is any system that provides a plurality of virtual connections. Such a system could be comprised of individual ATM cross-connect devices interconnected by ATM connections using DS3 or SONET for transport. An example of an ATM cross-connect is the NEC Model 10.

Thus, Christie 525 discloses that NEC Model 10 is an example of an ATM cross connect. The Examiner appeared to argue that the NEC Model cross connect is a call model operable to model multiple switches. Applicants submit that the NEC Model 10 is a particular model of an ATM cross connect, not a call model.

Christie 525, at column 15, lines 1-4 discloses:

> Call manager 720 could include the functionality specified in the Intelligent Network Call Model (INCM) of ITU-T Q.1214 which encompasses the main functionality of the CCF. Call center 722 receives IAM messages and creates an originating call model process for each IAM.

Thus, the Examiner appeared to argue that the Intelligent Network Call Model (INCM) of ITU-T Q.1214 which encompasses the main functionality of the call control function (CCF), is a call model operable to model multiple switched virtual circuits for providing VToA using an ATM network. However, the Intelligent Network Call Model (INCM) of ITU-T Q.1214 is a model of the functionality of call control functions. Applicants submit that Christie 525, Christie 195, as well as the Intelligent Network Call Model (INCM) of ITU-T Q.1214 do not disclose or suggest an ATM signaling intercept processor being operable to model multiple switched virtual circuits, including the ATM switched virtual circuit, for providing VToA using the ATM network, as recited in claim 15.

Claim 16 depends from claim 1 and further recites that the ATM edge switch receives the input ATM setup message in a predefined format from a customer premises equipment. On page 12 of the Office Action, the Examiner argued that Christie 525 discloses this feature at column 3, lines 57-60.

> Christie 525, at column 3, lines 57-60 discloses:
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> User 110 and user 120 could be any entity that supplies telecommunications traffic to network 100. Some examples would be a local exchange carrier (LEC) switch or customer premises equipment (CPE).

Neither Christie 525 nor Christie 195 discloses or suggests an ATM edge switch receiving an input ATM setup message. Other protocols, such as SS7 or ISDN for requesting calls are described as being received from the customer premises equipment. Therefore, neither Christie 525 nor Christie 195 discloses or suggests the ATM edge

switch receiving the input ATM setup message in a predefined format from a customer premises equipment, as recited in claim 16.

Independent claim 26 is directed to an ATM telecommunication network with an intelligent network for providing VToA services using an ATM switched virtual circuit. The ATM telecommunications network includes an ATM network, an ingress ATM edge switch, an egress ATM edge switch, and an intelligent network that includes a multi-service control point, an ATM signaling intercept processor, a second multi-service control point, a second ATM signaling intercept processor, and a service administration. The ATM network is operable to communicate ATM cells and ATM messages. The ingress ATM edge switch is in communication with the ATM network and an ingress CPE. The ingress ATM edge switch is operable to receive an input ATM setup message from an ingress CPE and to communicate an output ATM setup message to the ATM network. The egress ATM edge switch is in communication with the ATM network and an egress CPE. The egress ATM edge switch is operable to receive the output ATM setup message from the ATM network and to communicate an ATM setup message to an egress CPE. The multi-service control point is operable to receive an input extracted from the input ATM setup message that includes a called party phone number value and a VToA designator, and generate an output in response for use in generating the output ATM setup message. The ATM signaling intercept processor is operable to intercept the input ATM setup message from the ingress ATM edge switch, extract the input from the input ATM setup message, communicate the input to the multi-service control point, receive the output generated by the multi-service control point, generate the output ATM

setup message using the output, and communicate the output ATM setup message to the ingress ATM edge switch of the ATM network. The second multi-service control point is operable to receive an egress input extracted from the output ATM setup message that includes the called party phone number value, and generate an egress output in response. The second ATM signaling intercept processor is operable to intercept the output ATM setup message from the egress ATM edge switch of the ATM network, extract the egress input from the output ATM setup message, communicate the egress input to the second multi-service control point, receive the egress output generated by the multi-service control point, generate an ATM setup message using the output, and communicate the ATM setup message to the egress ATM edge switch of the ATM network. The service administration is operable to provision the multi-service control point, the ATM signaling intercept processor, the second multi-service control point and the second ATM signaling intercept processor.

Applicants submit that certain features of claim 26 are similar to features of claim 1. For example, the recital of the multi-service control point of claim 1 is similar to the recital of the multi-service control point of claim 26. Applicants submit that claim 26 is patentable over Christie 525 and Christie 195 for reasons similar to those provided with respect to the multi-service control point of claim 1. Therefore, Applicants respectfully request that the rejection of claim 26 be withdrawn.

Independent claim 29 is directed to a method for providing VToA using an intelligent network and a switched virtual circuit over an ATM network. The method includes intercepting an input ATM setup message from an ingress ATM edge switch of

the ATM network, extracting information from the input ATM setup message, analyzing the information to determine if the input ATM setup message is a request to set up an SVC for VToA, determining an ATM address of a called party CPE, generating an output ATM setup message that includes the ATM address of a called party CPE, and communicating the output ATM setup message to the ingress ATM edge switch of the ATM network.

Applicants submit that claim 1 recites certain features similar to claim 29. For example, the discussion of claim 1, above, explains that neither Christie 525 nor Christie 195 disclose or suggest the VToA designator. Therefore, both references fail to disclose or suggest analyzing the information to determine if the input ATM setup message is a request to set up an SVC for VToA. For at least this reason. Applicants submit that claim 29 is patentable over Christie 525 and Christie 195 and respectfully request that the rejection of claim 29 be withdrawn.

Claims 30-37 and 40 depend from claim 29 and are patentable over Christie 525 in view of Christie 195 for at least the reasons discussed with respect to claim 29. Therefore, Applicants respectfully request that the rejection of claim 30-37 and 40 be withdrawn.

Amended independent claim 41 is directed to a method for providing VToA using an intelligent network and a switched virtual circuit over an ATM network. The method includes receiving a request at an ingress CPE to make a VToA call that includes a called party phone number value, generating an input ATM setup message at the ingress CPE that includes the called party phone number value and a VToA designator stored in a

designated parameter of the input ATM setup message, receiving the input ATM setup message at a device side of an ingress ATM edge switch of the ATM network, intercepting the input ATM setup message from the device side of the ingress ATM edge switch of the ATM network, extracting information from the input ATM setup message that includes the VToA designator and the called party phone number value, analyzing the information to determine if the VToA designator is present, determining an ATM address of a called party CPE using the called party phone number value and a database, determining an ATM address of a called party CPE using the called party phone number value and a database, generating an output ATM setup message that includes the ATM address of a called party CPE and the called party phone number value, communicating the output ATM setup message to a network side of the ingress ATM edge switch of the ATM network, receiving the output ATM setup message at a network side of an egress ATM edge switch, intercepting the output ATM setup message from the network side of the egress ATM edge switch of the ATM network, extracting egress information from the output ATM setup message that includes the ATM address of the called party CPE, communicating the output ATM setup message to a device side of the egress ATM edge switch, and communicating the output ATM setup message to the called party CPE.

Applicants submit that, for reasons similar to those provided with respect to claim 1, that Christie 525 and Christie 195 do not disclose or suggest at least the feature of analyzing the information to determine if the VToA designator is present. For at least this reason, Applicants respectfully request that the rejection of claim 41 be withdrawn.

Claim 44 depends from claim 41 and is patentable over Christie 525 and Christie 195 for at least the reasons discussed above with respect to claim 41. Therefore, Applicants respectfully request that the rejection of claim 44 be withdrawn.

Rejection of Claim 17

On page 24 of the Office Action, the Examiner rejected claim 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Christie 525 in view of U.S. Patent No. 6,195,735 to Allen, Jr. et al. ("Allen"). Applicants respectfully traverse the rejection.

Claim 17 depends from claim 1. The disclosure of Allen does not satisfy the deficiencies of Christie 525 as set forth in claim 1. Applicants submit that claim 17 is patentable over Christie 525 and Allen, whether taken together or in any combination, for at least the reasons given with respect to claim 1. Applicants, therefore, respectfully request that the rejection of claim 17 be withdrawn.

Objection of Claims 4, 5, 7, 27, 28, 38, 39, 42 and 43

On page 24 of the Office Action, the Examiner objected to claims 4, 5, 7, 27, 28, 38, 39, 42 and 43 as allegedly being dependent upon a rejected base claim. For at least the reasons given above, Applicant submit that the claims depend from allowable claims. Therefore, Applicants respectfully request that the objection be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 13-2491 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY & SNYDER, L.L.P.

By: Richard C. Irving

Richard C. Irving
Registration No. 38,499

Date: August 4, 2004

11240 Waples Mill Road
Suite 300
Fairfax, Virginia 22030
Telephone: (571) 432-0800
Facsimile: (571) 432-0808